

sends a list of available simulations back to the user's PC 80. This list will include the new transducer simulation that was uploaded previously. The user selects this simulation. The user then uses the DOE user interface which is embedded in the extensions to Excel to specify the size of the DOE matrix to be run and the specific kind of DOE experiment pattern to run. The user then starts the simulation. For each row of the DOE matrix, the analysis server 100 will build an input parameter file (*.in) and send it to the simulation host. It will invoke the simulator with that input file. The simulator will call an "expand" program to expand the input file into a new Master Parameter file, using the information in the Variable Definition file (*.vdf) to guide this expansion. The simulation is then run with the new Master Parameter file. At the end of the simulation, the "score" program is called to calculate the "goodness" parameter using the CTQ weights contained in the Policy file. The simulator formats the CTQs and goodness measure into a "*.out" file. The simulator then terminates. The analysis server 100 reads the "*.out" file and sends the results of that run back to Excel 88 on the user's PC 80. These last two steps are repeated for each row of the DOE matrix. When all rows have been run, the user can then use other DOE tools 90 to generate regressions, examine the quality of data, build a model, make graphics, etc.

[0090] While the invention has been described with reference to preferred embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. For example, the computation-intensive parts of the simulation need not be implemented on a remote server. Instead the Transducer Design Advisor, simulator, analysis server and DOE tools may be implemented on a single computer having sufficient computational power. In addition, many modifications may be made to adapt a particular situation to the teachings of the invention without departing from the essential scope thereof. Therefore it is intended that the invention not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but

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that the invention will include all embodiments falling within the scope of the appended claims.

[0091] As used in the claims, the term "computer system" is a system having one or more computers.